



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,877	05/18/2006	Thomas Dunker	DUNKER ET AL-2 PCT	3786
25889	7590	04/30/2009		
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			EXAMINER MERENE, JAN CHRISTOP L	
			ART UNIT	PAPER NUMBER
			3733	
			MAIL DATE	DELIVERY MODE
			04/30/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,877	Applicant(s) DUNKER ET AL.	
	Examiner JAN CHRISTOPHER MERENE	Art Unit 3733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5, 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 recites the limitation "rigidly bent shape". There is insufficient antecedent basis for this limitation in the claim. The examiner will treat with art as best understood.

Claim Rejections - 35 USC § 102

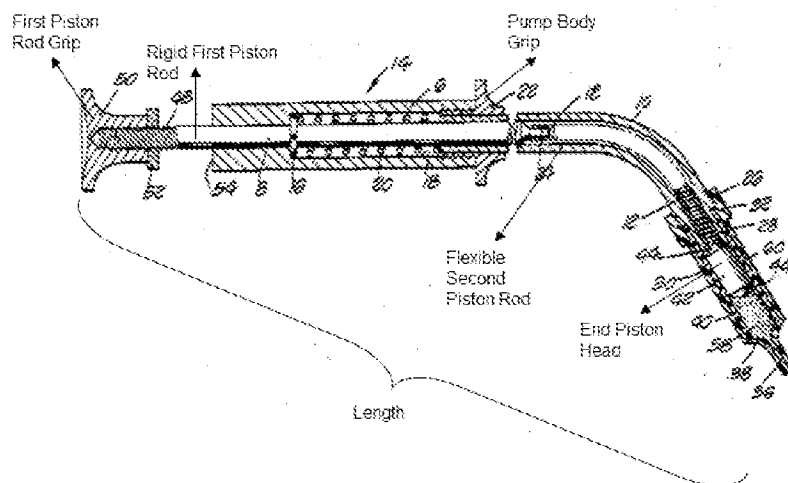
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. **Claims 3-5, 7, 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Schmitz US 3,724,076.

Regarding **Claim 15**, Schmitz discloses an injection pump for application of highly viscous media that have to be applied with pressure during percutaneous vertebroplasty comprising:

- (a) a pump body having a pump body proximal end, a pump body distal end, and a pump body length (as seen in Fig below);
- (b) a pump body grip fastened at said pump body proximal end (as seen in Fig below); and

Art Unit: 3733

(c) a piston system comprising a rigid first piston rod having a first piston rod proximal end and a first piston rod distal end, a flexible second piston rod connected to said first piston rod at said first piston rod distal end and having a second piston rod distal end, a first piston rod grip connected to said first piston rod at said first piston rod proximal end, and an end piston head at the second piston rod distal end for taking up bone cement; wherein said end piston head is movable along the pump body length between the pump body distal end and the pump body proximal end (as seen in Fig below where there is a first rigid piston rod connected to a flexible second piston rod and an end piston head moveable along the length).



Regarding **Claim 3**, Schmitz discloses the pump body comprises a ductile plastic material (see Col 1 lines 65-67).

Regarding **Claim 4**, Schmitz discloses the pump body has a rigidly bent shape (as seen in Fig above and see Col 2 lines 42-44).

Regarding **Claim 5**, Schmitz discloses the flexible second piston rod conforms to the rigidly bent shape of the pump body (as seen in Fig above and Col 2 lines 39-41 where the second piston rod is flexible and can conform to the bent shape).

Regarding **Claim 7**, Schmitz discloses the second piston rod is fitted with a flexible material (see Col 2 lines 39-41).

Regarding **Claim 14**, Schmitz discloses the pump body is arranged at the pump body grip and is firmly rotatable and replaceable (as seen in Fig above in Claim 15 where it is rotatable and replaceable if one chooses to do so).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shmitz US 3,724,076 in view of Fischione US 4,655,749.

Shmitz discloses the claimed invention as discussed above but does not disclose sealing rings.

However Fischione discloses a piston head with sealing rings (#56) which are used to create a suction effect (see Fig 3 and Col 3 lines 40-44, 60-68 and Col 4 lines 38-66, where rings are provided to seal the chamber and prevent leakage, creating a suction effect when the piston #36 is moved up and down).

Art Unit: 3733

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the injection pump of Shmitz with the sealing rings (or rings #56) of Fisschione because they prevent leakage of fluid and sealing rings such as O-rings are well known in the art for creating a suction effect within an injection pump device (see Col 3 lines 60-68 and above).

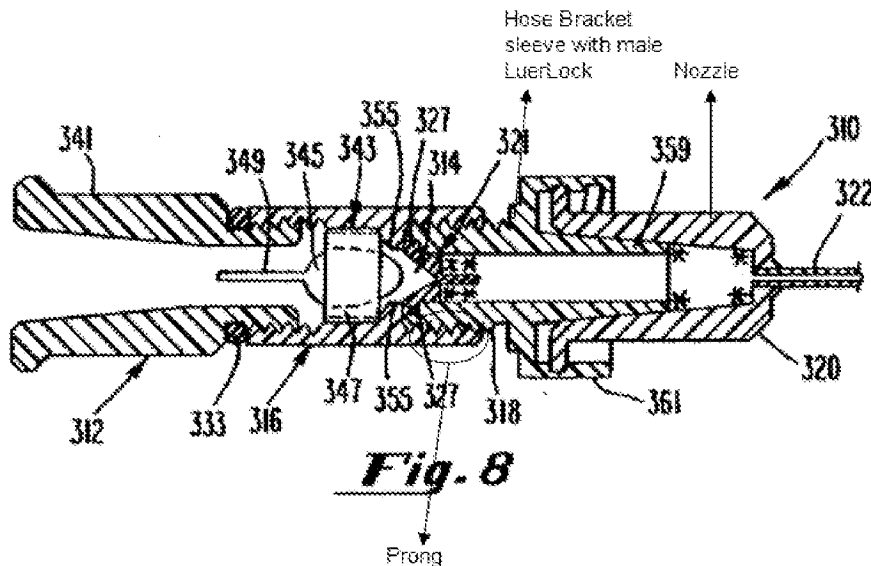
7. **Claims 9-10, 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmitz US 3,724,076 and Fischione US 4,655,749, as applied to claim 8 above, and in further view of Century US 5,513,630.

Shmitz and Fischione disclose the claimed invention as discussed above, wherein the injection pump has a Luerlock (#36) for attachment with a nozzle (#30 and see Col 2 lines 54-61), but does not specifically disclose a hose bracket sleeve with an attached rotatable male LuerLock at the distal end of the pump body, wherein a nozzle is screwed to the rotatable male LuerLock to take up highly viscous media from a respective vessel which nozzle can be unscrewed after absorption of such highly viscous media, wherein the male LuerLock is fitted with a prong to fasten the pump body by radially pressure-forcing the pump body into place.

However, Century discloses disclose a hose bracket sleeve with an attached rotatable male LuerLock at the distal end of the pump body, wherein a nozzle is screwed to the rotatable male LuerLock to take up highly viscous media from a respective vessel which nozzle can be unscrewed after absorption of such highly viscous media, wherein the male LuerLock is fitted with a prong to fasten the pump body by radially pressure-forcing the pump body into place (see figs below and Col 10

Art Unit: 3733

lines 59-65, Col 11 lines 4-24, which teaches a standard male LuerLock to connect with a nozzle, where the LuerLock is attached to the body and is rotatable with prongs that help keep the LuerLock in place, which also exerts force on the body).



It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LuerLock connection of the body with the nozzle of Shmitz et al with the rotatable male LuerLock connection and prongs of Century (as discussed in the previous paragraph) because it applies a known technique to a known device ready for improvement to yield predictable results of fastening a nozzle against an injection device, (see figs below and Col 10 lines 59-65, Col 11 lines 4-24).

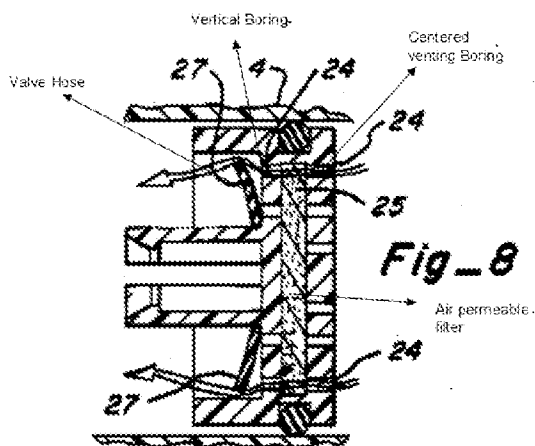
Furthermore, the rotatable male LuerLock with prongs fitted to a complimentary nozzle as taught by Century is also a simple substitution of known element for another to obtain predictable results of fastening a nozzle against an injection device (see above).

Art Unit: 3733

8. **Claims 11-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shmitz US 3,724,076 and Fischione US 4,655,749, as applied to claim 8 above, and in further view of Baldwin et al US 5,238,003.

Shmitz and Fischione disclose the claimed invention as discussed above but does not specifically disclose the end piston head has a centered venting boring with a rear section equipped with an air-permeable filter, wherein the centered venting boring has a vertical boring which is radially covered with a valve hose.

However, Baldwin discloses a similar injection pump with an end piston head with a centered venting boring with a rear section equipped with an air-permeable filter, wherein the centered venting boring has a vertical boring which is radially covered with a valve hose (as seen in Fig below).



It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the injection pump of Shmitz and Fishione to include the filter and venting boring and valve hose of Baldwin as taught above because it applies a known technique to a known device ready for improvement to yield predictable results

Art Unit: 3733

of having a filter and the venting boring to allow for passage of air but is impervious to fluids (See Col 4 lines 6-18).

Response to Arguments

9. Applicant's arguments with respect to claims above have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and relied upon is considered pertinent to the applicant's disclosure. See PTO-892 for art cited of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAN CHRISTOPHER MERENE whose telephone

Art Unit: 3733

number is (571)270-5032. The examiner can normally be reached on 8 am - 6pm Mon-Thurs, alt Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo Robert can be reached on 571-272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jan Christopher Merene/
Examiner, Art Unit 3733

/Eduardo C. Robert/
Supervisory Patent Examiner, Art Unit 3733